

## **IN THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in this Application:

**Please cancel claims 2, 4 and 9–14 without prejudice or disclaimer.**

**Please amend claims 1 and 8 as follows:**

1. (currently amended) A diagnosis support apparatus which supports diagnosis by processing an image, comprising:

an enhancement unit configured to enhance a circular shadow existing in an image by enhancing a pixel value gradient of the circular shadow while suppressing an overall pixel value gradient of the image; and

an extraction unit configured to extract an isolated shadow from the image enhanced by said enhancement unit by using a disk shaped morphological filter and a ring shaped morphological filter.

2. (cancelled)

3. (original) The apparatus according to claim 2, wherein said enhancement unit

calculates a normalized gradient of each pixel of the image, and

determines a pixel value of a predetermined pixel on the basis of a sum of inner products of normalized gradients of a plurality of surrounding pixels on a circumference at a

predetermined distance from the predetermined pixel and unit vectors extending from the plurality of surrounding pixels to the predetermined pixel.

4. (cancelled)

5. (original) The apparatus according to claim 1, wherein said extraction unit acquires, as a first pixel value, a maximum pixel value from all pixels, of the respective pixels in the image, which are located within a first predetermined distance from the predetermined pixel,

acquires, as a second pixel value, a maximum pixel value from pixels which are located at not less than a second predetermined distance and within a third predetermined distance from the predetermined pixel, and

sets a difference between the first pixel value and the second pixel value as a value of the predetermined pixel.

6. (original) The apparatus according to claim 1, further comprising a labeling unit configured to label a region, of the isolated shadow extracted by said extraction unit, which exhibits a pixel value not less than a predetermined pixel value.

7. (original) The apparatus according to claim 1, wherein the apparatus further comprises a generating unit configured to generate a high-frequency image by extracting a high-frequency component from the image, and

said enhancement unit generates an enhanced image by enhancing a circular shadow existing in the high-frequency image.

8. (currently amended) A diagnosis support method which processes an image for diagnosis support, comprising:

an enhancement step of enhancing a circular shadow existing in an image by enhancing a pixel value gradient of the circular shadow while suppressing an overall pixel value gradient of the image; and

an extraction step of extracting an isolated shadow from the image enhanced in the enhancement step by using a disk shaped morphological filter and a ring shaped morphological filter.

9.-14. (cancelled)

15. (original) A control program for causing a computer to execute a method defined in claim 8.

16. (original) A computer-readable memory storing a control program for causing a computer to execute a method defined in claim 8.